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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/418,323

10/14/1999

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01/27/2005

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EXAMINER

NGUYEN, CHAU T

ART UNIT

PAPER NUMBER

2176

DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/418,323

Applicant(s)

LARSSON ET AL.

Examiner

Chau Nguyen

Art Unit

2176

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Amendment, received on 11/10/2004, has been entered. Claims 15-32 are presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 15-32 rejected under 35 U.S.C. 103(a) as being unpatentable over Percival et al. (Percival), Patent No. 5,991,816, and further in view of Keith et al. (Keith), Patent No. 5,966,465.

4. As to claim 15, Percival discloses a method of compressing an image at a server, storing a compressed representation of the image at the server and transmitting at least part of the compressed representation of the image from the server to at least one client, the method comprising:

Art Unit: 2176

transforming the image (col. 6, lines 10-26: a digitized image is transformed);

after said transforming, subdividing each block (col. 6, lines 53-64: the digitized image is divided into 2x2 pixel blocks);

compressing, at least a first block and at least a second block into different independently decodable coding units, respectively (col. 6, line 44 – col. 7, line 29: a digitized image composed of image pixel blocks A, B, C, and D, and each of pixel block describes the color or intensity of the underlying image at comparable coordinates, and image pixel blocks A, B, C, and D are considered as independently decodable coding units; the transformation provides image data that is susceptible to additional compression techniques);

after said compressing, storing at least one of the first and second coding units on the server (col. 8, line 63 – col. 9, line 6: once the image has been transformed, it is stored in the memory of the image transmitting server 12);

receiving a request at said server (col. 9, lines 29-52: image transmitting server 12 awaits a request for an image as indicated at decision block 101 of Figure 2; and col. 10, lines 45-64: allowing a user to select a portion of the image which refers to image data relating to the image); and

responsive to the request, transmitting from the server to at least one client the coding unit(s) corresponding to the request so that upon receiving the request the coding unit(s) corresponding to the request are transmitted to the at least one client without the server having to employ further entropy encoding with respect thereto;

However, Percival does not disclose transforming the image into a frequency domain to form frequency domain coefficients; subdividing the frequency domain coefficients corresponding to the image into at least one block; each block comprising at least one transformed coefficient; and compressing via entropy coding. In the same field of endeavor, Keith discloses image data 101 is received and transformed to produce a series of coefficients or different frequency subbands such as LL frequency subband, LH, HL, or HH subbands, which representing a multi-resolution decomposition of the image, and each frequency subband can be transformed or decomposed into subbands (blocks), and the coefficients generated as a result of the wavelet decomposition are entropy coded in an entropy coding 106 (col. 8, line 47 – col. 9, line 39, col. 16, line 11- col. 18, line 49. Since Keith discloses transforming an image data, which is similar to the system of Percival, thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Percival and Keith to include transforming the image into a frequency domain to form frequency domain coefficients; subdividing the frequency domain coefficients corresponding to the image into at least one block; each block comprising at least one transformed coefficient; and compressing via entropy coding. Keith suggests that transforming an image would provide good energy compaction and also provide more flexible multi-use image formats.

5. As to claim 16, Percival and Keith (Percival-Keith) disclose wherein the request describes at least one region of interest of the image, wherein the server identifies

Art Unit: 2176

which of stored coding units contain information transformed coefficients needed to reconstruct said region of interest, and the server transmits the identified coding unit(s) needed to reconstruct the region of interest to the at least one client (Percival, col. 4, line 31 – col. 5, line 5, col. 9, lines 29-54; Sato, col. 4, line 41 – col. 5, line 5).

6. As to claim 17, Percival-Keith disclose wherein the request defines at least one coding unit, and the server transmits the at least one coding unit that is defined in the request to the at least one client (Percival, col. 10, line 65 – col. 11, line 29).

7. As to claim 18, Percival-Keith disclose wherein the request contains information identifying region(s) of less interest of the image that the at least one client does not want to receive (Percival, col. 10, line 46 – col. 11, line 3).

8. As to claim 19, Percival-Keith wherein the region of interest is defined by a mask in the transform domain (Percival, col. 9, lines 39-52).

9. As to claim 20, Percival-Keith disclose wherein the region(s) of less interest is defined by a mask in the transform domain (Percival, col. 10, line 65 – col. 11, line 37).

10. As to claim 21, Percival-Keith disclose wherein the request comprises information identifying at least one coding unit that the at least one client does not want to receive (Percival, col. 10, line 46 – col. 11, line 29).

11. As to claim 22, Percival-Keith disclose wherein, in response to the request, the server only transmits coding units that have not already been transmitted to the at least one client (Percival, col. 2, lines 49-63: a user, prior to completion of the transmission of the image data of the first field, may view the image and provide instructions defining a second field, and these instructions may be received by the transmitting site causing it to continue the ordered transmission of the image data, excluding data not in the second field).

12. As to claim 23, Percival-Keith disclose wherein the request defines at least one coding unit, and the server only transmits in response to the request coding units that have not already been transmitted to the at least one client (Percival, col. 11, lines 42-54).

13. As to claim 24, Percival-Keith disclose wherein the image is transformed into the frequency domain using at least a wavelet transform (Keith, col. 7, lines 62-67 and col. 9, lines 5-40 and col. 16, lines 22-32).

14. As to claim 25, Percival-Keith disclose wherein the blocks are arbitrarily shaped blocks (Keith, col. 16, line 23 – col. 17, line 56).

Art Unit: 2176

15. As to claim 26, Percival-Keith disclose wherein the image is quantized (Keith, col. 9, lines 5-16).

16. Claims 27-32 are corresponding to server and client apparatus containing similar limitations as discussed in claims 15-26; therefore, they are rejected under the same rationale.

Response to Arguments

In the remarks, Applicant(s) argued in substance that

A) "The cited art fails to disclose or suggest the invention of claim 15." (see page 7 of remarks)

As to point A, Percival discloses a method of compressing an image at a server, storing a compressed representation of the image at the server and transmitting at least part of the compressed representation of the image from the server to at least one client, the method comprising:

transforming the image (col. 6, lines 10-26: a digitized image is transformed);

after said transforming, subdividing each block (col. 6, lines 53-64: the digitized image is divided into 2x2 pixel blocks);

compressing, at least a first block and at least a second block into different independently decodable coding units, respectively (col. 6, line 44 – col. 7, line 29: a digitized image composed of image pixel blocks A, B, C, and D, and each of pixel block describes the color or intensity of the underlying image at comparable coordinates, and image pixel blocks A, B, C, and D are considered as independently decodable coding units; the transformation provides image data that is susceptible to additional compression techniques);

after said compressing, storing at least one of the first and second coding units on the server (col. 8, line 63 – col. 9, line 6: once the image has been transformed, it is stored in the memory of the image transmitting server 12);

receiving a request at said server (col. 9, lines 29-52: image transmitting server 12 awaits a request for an image as indicated at decision block 101 of Figure 2; and col. 10, lines 45-64: allowing a user to select a portion of the image which refers to image data relating to the image); and

responsive to the request, transmitting from the server to at least one client the coding unit(s) corresponding to the request so that upon receiving the request the coding unit(s) corresponding to the request are transmitted to the at least one client without the server having to employ further entropy encoding with respect thereto;

However, Percival does not disclose transforming the image into a frequency domain to form frequency domain coefficients; subdividing the frequency domain coefficients corresponding to the image into at least one block; each block comprising at least one transformed coefficient; and compressing via entropy coding. In the same

Art Unit: 2176

field of endeavor, Keith discloses image data 101 is received and transformed to produce a series of coefficients or different frequency subbands such as LL frequency subband, LH, HL, or HH subbands, which representing a multi-resolution decomposition of the image, and each frequency subband can be transformed or decomposed into subbands (blocks), and the coefficients generated as a result of the wavelet decomposition are entropy coded in an entropy coding 106 (col. 8, line 47 – col. 9, line 39, col. 16, line 11- col. 18, line 49. Since Keith discloses transforming an image data, which is similar to the system of Percival, thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Percival and Keith to include transforming the image into a frequency domain to form frequency domain coefficients; subdividing the frequency domain coefficients corresponding to the image into at least one block; each block comprising at least one transformed coefficient; and compressing via entropy coding. Keith suggests that transforming an image would provide good energy compaction and also provide more flexible multi-use image formats.

B) "Percival does not divide the image into separately decodable compressed coding units as alleged by the Office Action." (see page 7 of remarks)

As to point B, Percival discloses in col. 6, line 44 – col. 7, line 29: a digitized image composed of image pixel blocks A, B, C, and D, and each of pixel block describes the color or intensity of the underlying image at comparable coordinates, and image pixel

blocks A, B, C, and D are considered as independently decodable coding units; the transformation provides image data that is susceptible to additional compression techniques.

C) There is no suggestion or hint to combine Keith reference with Percival reference.

17. As to point C, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Percival does not disclose transforming the image into a frequency domain to form frequency domain coefficients; subdividing the frequency domain coefficients corresponding to the image into at least one block; each block comprising at least one transformed coefficient; and compressing via entropy coding. In the same field of endeavor, Keith discloses image data 101 is received and transformed to produce a series of coefficients or different frequency subbands such as LL frequency subband, LH, HL, or HH subbands, which representing a multi-resolution decomposition of the image, and each frequency subband can be transformed or decomposed into

Art Unit: 2176

subbands (blocks), and the coefficients generated as a result of the wavelet decomposition are entropy coded in an entropy coding 106 (col. 8, line 47 – col. 9, line 39, col. 16, line 11- col. 18, line 49. Since Keith discloses transforming an image data, which is similar to the system of Percival, thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Percival and Keith to include transforming the image into a frequency domain to form frequency domain coefficients; subdividing the frequency domain coefficients corresponding to the image into at least one block; each block comprising at least one transformed coefficient; and compressing via entropy coding. Keith suggests that transforming an image would provide good energy compaction and also provide more flexible multi-use image formats.

18. Applicant's arguments filed on 11/10/2004 have been fully considered but they are not persuasive. Please see the response to arguments above.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau Nguyen whose telephone number is (571) 272-4092. The examiner can normally be reached on 8:00 am – 5:00 pm Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild, can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2176

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chau Nguyen
Patent Examiner
Art Unit 2176



JOSEPH FEILD
SUPERVISORY PATENT EXAMINER